Notebook Series -- Notebooks by Edison
Notebook, N-14-06-13.2

This notebook was used by Edison and an unidentified employee during June 1914. It contains notes on the process of forming disc record blanks. Entries by the unidentified employee at the beginning of the book provide a daily record of observations from June 3 to June 26 concerning "new process Blank machines" for the production of disc record blanks. The daily record includes information about problems with machines, the number of blanks produced, and the number of men working on various parts of the production process. The following entries, which are by Edison, pertain to experiments made with one of the loading and pressing machines to determine how to apply even pressure on the powder (used to form blanks) with a rubber plunger. Included are notes on the timing, the pressure applied, and changes in various equipment, such as scrapers and planers. There are also notes on problems with the powder and the varnishes used to coat the blanks. At the end of the book are several pages of drawings and rough calculations that relate mainly to the layout of a manufacturing department for the production of disc record blanks. The front cover is labeled "Disc Record." The pages are unnumbered. Approximately 50 pages have been used.

60912

Acme Co.,
MFG. STATIONERS,
95 JOHN ST.
AND
19 PLATT ST.
NEW YORK.

New Process Blanket
8 H 2

6/3 -14

Starting of new process Blank machine

hammer stroke 94 to the min.
700 lbs pressure on hydraulick press
7 1/2 in ram

Note taken of steel color used in first two operations clinging to die with rubber pad in press

6/5 -14

5 rounds turned out on the old schedule #10
10 min on 1000 lbs hydraulick press
100 lbs steam and Cool

3 rounds turned out on the Edison Double XX #3

5 min on contact steam on full
3 " " 1000 lbs hydraulick
steam on full then Cool
under this schedule dial hand held on 1000 lbs continuely throwing both steam and cooling

6/8-14

packing schedule changed from 1/2 min to 1 min to avoid dark spots.
note taken of change of the above schedule for the better we getting a more uniform solve.

6/9 - 14

Things in general running OK today.
Total number of blanks turned out today two men 106 Day men
" " 126 Night "

June 10 - 14

Everything running OK
Total number of blanks turned out today two men 120 Day men
132 Night "

6/11 -14

note taken of actual time consumed from when the mold is taken filled packed rammed scraped capped ready for large press

time consumed in filling and packing - - 1 min 1/4
" " " ramming in press - - 3/4 min
" " " scraping on table 1 min. 20 sec
one 1/2 revolution of table - - -
time consumed in capping - - - - 1/2 min

Lot #5 #6 #7 set up today

Lot #8 run on the Edison double x 3 second with the hydralick open after having the 5 min contact
note taken of indicator on hydralick rising to 1150 lbs at time then droping back to 1000

Total number of blanks turned out today 192
two men on new process machines
one press man

6/11-14
night work

Being a few oil spots on blanks
every thing O.K.
Total number of blanks turned
out by night men 192
two men on new process machine
one press man

6/12-14
day work

Two of packing machines
not running this A.M. on
account of powder becoming
lodged in elev. wheels &
under neath table.
Total number of blanks turned out
by 2 men loading 1 extracting
and 1 pressman 214
change in powder on the last
100 turned out 44 being of
powder marked XX 3 A this
powder to continue ~~until~~
note taken of change

powder changed to regular
powder

6/12-14
night work

Things running along smoothly
note taken of small specks
of brass in 3 of the blanks.
the above mentioned fault
traced to a small brass
headed hamer that the men
were using to tap down
pins in molds before filling
the same with powder
the above mentioned hamer discarded
at once
Total number of blanks turned out
by two men 136

6/13 - 14

Things running along very
nicely today
note taken of 8 or 9 blanks
having small grains of
brass in them
traced to brass loading
colors
Total number of blanks
turned out today 276
2 men on new process
machines one man extracting
one press man

6/15 - 14

change from 2 single valves to one free way valve
Considerable trouble this morning
with belt controlling blades on
turn table.
all so hydrolick pressure bellow
as quite some to day.

Towards noon things adjusted themselves
again
Total number of blanks turned
out today 288
2 men on machines one man
running press one extractor and
one press man
on account of change of valves in packing
press time in press operation reduced 1/4 min

6/15 - 14

Trouble with belt controlling blades
on turn table during night
Total number of blanks turned
out bye night crew 240

2 men on packing machines one
man capping one man extracting
one press man
quite some trouble with hydrolick
pressure tonight

6/16-14

Things running very nicely today
hydraulick pressure went down once today but did not seem to have effected our blanks in press
Total number of blanks turned out today by 3 men on new process machines one extractor and one press man
Total 396

6/16-14

Machines running nicely

Total number of blanks turned out by 3 men on new process machines one extractor one pressman 396

6/16-14

Day crew 396 Blanks
Night " 396 "

6/18-14

change made in driving wheels controlling main belt that controll blades on turn table
Hydraulick went down one this AM but did little harm to our work in large presses
note taken of change of wheels on main shaft to reduce speed of blades on turn table
note taken of blades running very irregular in scraping off powder on molds on turn table
Two more men added to crew now at work on machines at 4 P.M. crew as it now stands 2 loaders one caper one man on small press one extractor one powder man and one press man
Total turnout
480 Blanks

6/18 - 14

Barring previous mention faults every thing running OK. crew increased by two men
Total output 480. Blanks

6/19 - 14 Day crew No. 2
Note take of change made in running of large presses

starting from Lot #52 the sealoll to run 5 min. cont 3 min. 1000 lbs the hydrolick to be lift open and cool on our previous Lots we held our hydrolick at 1000 lbs heat

Other wise things running nicely
Total number of blanks turned out 684

6/19 - 14
Night crew No 1
note taken of hammers on two of packing machines varies
Total number of blanks turned out tonight by 3 packers 2 capers one pressman 724

6/20 - 14
Day work No 2 crew
Hamers on above mentioned machines fixed things running smothly
Total number of blanks turned out today 746

6/20 - 14
Night work No 1 crew

Everything running smothly
Total number of blanks turned out
60 rounds 702

6/22-14

note taken of rubber pad becoming loose in small press removed the same 6 30 PM and replaced a new one in place

Crew increased to 4 loaders

3 men capping 2 running small press one extractor

one powder man 2 men on large presses one man distributing molds and unloading large presses

Total turned out today.

1036 Blanks

6/22-14

Night shift

Every thing running O.K.

Total out put of No 1 & No 2 crew

840

6/23-14

all but one of packing machines stuck this A.M. fault. powder becoming lodged in arg. shell & under [illegible] packing table

Total number turned out today

1152 Blanks

6/23

Everything working OK tonight
Total number of blanks
turned out tonight
852

6/24-14

All packing machines clogged
This A.M.
fault powder measuring clogged
in cogg wheels in the
machine packing table

Note taken of change made
in scale controlling powder
chute
small lead hood made
to be used in filling scoops
with powder for new process
machines
This change will be noticed starting at
Lot #17. - 842 Blanks 845 Powder

Note taken of firm extractor added
to new process machine outfitt

Total output of blanks
today 1128

6/24 -14

Night crew
Everything running OK.
Total output of blanks
1080

6/26 - 14

Things running very smoothly today
Total out put today 1348 Blanks

6/26 - 14

note table of hydraulic pressure going down on 4 different occasions this am. all held 15 min. but hydraulic pressure very poor this afternoon all 2 [illegible] dropping as low as 400 lbs.

Total number of blanks turned out today 1152

6/27 - 14

Things working O.K. today

Total out put of blanks

June 29 1914

Experiments on Unit No 1
& Loaders 4 magnets one
press 4 planers

Exprmt to make even pressure
of powder by rubber plunger &
diminish the lifting of the
surface when rubber leaves
powder —

Press has 7½ inch ram —
usually we use 700 lbs
pressure. This makes lifts.
Some of the lifts peel off
main body below the planing
line all centers left
more than edge, tried 1000
lbs & let it up very slow did
no good, some of lifts went
way below planing off line

↓ below
x x Etc no lifts

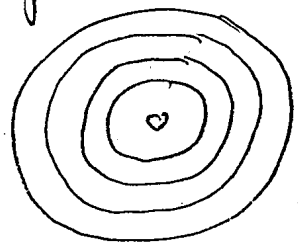
It looks as if Center got very little pressure and trouble was in original loading of the powder too much around edges.

We tried one at 700 lbs laying tin foil on powder & then pressing with the Rubber. This worked OK & powder did not stick to foil but the dents were there just the same but not so thick pulling hard on foil could feel the left as if air was under

We are now running the scraper on packing machine to load in 1/2 a pain instead of one man so powder will not pack so much around edges — no tin foil —

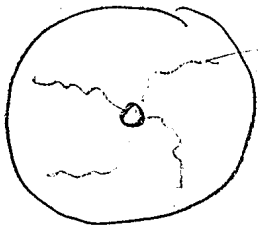
After shaving it seemed more

If its shrinking of the Rubber Coned put rubber on in rings.



Necessarily there would be spaces but am afraid they would get full of powder

Even than the 1 min loading notice on all this



think ½ min is better than 1 minute, but too much lifts —

One packed in 20 seconds appears better than 30 sec

We now try 14 seconds,

This seems thin lifts —

Our old 4 leaf planer planed it off good

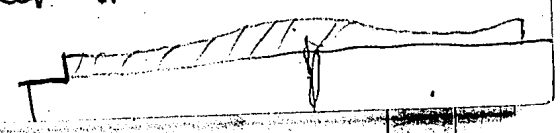
It looks as if old 4 leaf planer at 60 Rev was best

The 8 leafs makes too much air + does something bad shavers come too reflap —

We now change the planer on machine planer to 4 leafs instead of 8 leafs + run 60 — to see how it planes off —

The 4 leaf is much better its going 60 + old one 40, Think 40 Revolution of the planeing scraper 4 leaf is just about Right —

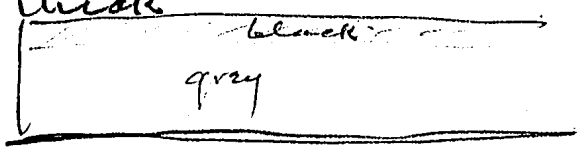
I noticed man let rubber pressure off too quick + all lifts pulled up in Center Wes



By teller rubber off slowly
dont left so much —

Tried 20 sec loading &
500 grams no better think
it not so good as hit +
pulls out below the ring

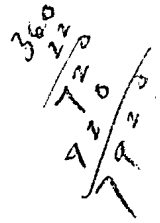
I notice that when
ready for Big final
press its one inch
thick



What Causes the black

We now make one of 20 sec loading
475 grms + lay one of the old
1/8 rubbers on powder + then
put in big rubber press
700 lbs —

1-1



This seems good, more room after planing ~~after planing~~ by finger ~~that~~ there was one or 2 small pull out below ring & finger felt one or 2 soft places but generally it was better

We duplicate this with Extra rubber 1/8 thick but put in planing & bring up & let off quick—

Rev of table 2 min 50 seconds

Can put 4 on say 4 in 3 min.

This would be 16 for the 4 tables in 3 min or 5 per min for the whole Unit. or maximum of 6600 for 22 hours

The planer scraper revolves
60 Rev -

With 1/4 rub put on + pressed
wkd up + down quick an
Could look 20 sec

On working quick in
process with putty rubber
Taking off rubber +
then breaking up flakes
of the putty by flat of
both hands it planes
off good — We must
break these flakes up as
the planer ~~bl~~ blades but
flakes + break out place
below ring wherever
when flakes broken up
by flat of hand only
powders + taken off by
planer + nothing breaks
below ring + we got
smooth surface

I timed press with
press man & one on
opposite side they
did 10 in 7 minutes
but they took off &
put in Extra rubber &
patted with both hands
the powder after
pressing —

Press man did & assy
2 per men & of 2 men
on side Extra to pat &
take to planer table
Can do 3 a minute

Since Centers are big hot
possibly we can
put a piece of rubber
on the 1/8 thick

& press center harder
or on plunger in press

June 30. 1 am

What is needed is very
smooth & very flat 1/8
rubber on powder with
the Reg thick rubber on
plunger of press

Edison No 1

The lot we are now
running there is 20 sec
pkg — 1/8 Extra rubber
on powder then press with
Rubber plunger put pressure
on & off fast as possible
& break up flake by
both hands pressing
down —

Planer 60 Rds table
1 Rd in 2 min 50 sec
Will transfer & present
12 at time, they look
good, some are a little dark
around edge on top

Edison No 1 - Transfer
OK. IIII II

Left Ck'd outside near edge instead inside II
Left Ck'd III
only 58%

But the powder is heated by Water old way & The Var is Reg Perfect Var —

2nd Lot

OK IIII I
Left Ck'd IIII 50%
Var Cracked II

Something wrong with the powder gas not out of it
Will try & get some steam heated powder —
& try it — Loading same way & try & use same lot of Varnish plates —

June 30 1914

and scarcely any on bottom bottom gray all over & very light gray in center —
test on left hand shows either that this way of loading is bad or the powder is bad having only been water heated in Vac Dryer —

The Varnish plates we will use is lot 362 a 632 Var

The Powder is the trouble
We just made 12 blanks with powder steam dried in Vac & the blanks showed perfectly Even No black around edge now

Printed
OK. 𝍸 𝍸 II

100%

June 30 1914

We will see how they transfer, if good, it will prove that its the powder & that it must be heated by steam to Condense the Varnish in powder so it will act as a Lubricant & pack even

Here are the Transfers from the steam dried powder 12 Transfers

OK 𝍸 𝍸 I XX

1 Cond- 100%

This is 1st Real proof that we must Condense our powder & therefore must use steam &

June 30 1914

be sure we get right temp & time —
We now use 3½ hours, & think
we must be sure our pressure
is right & to get Marquis
Keep it ½ hour longer in
Vac Dryer under steam
heat at proper pressure

2nd Lot Trumpters Samples XX
on back page

OK ||||| ||||

Comet 1
Small left Cracked 1

These would have been OK but
for Careless packing —

45) 1400 / 350 / 3 / 1050

1400 / 7 / 42 / 10

Hoffman Vac Dryers

gives 1200 blanks in 4 hours per round — 6 Rounds in 24 hours or 7200 blanks 24 hours

3 Vac Dryers 21600 —

no losses of powder

Digesters, 1½ days 1800 lbs of Resin per Digester

3 Digesters 5400 —

Another Digester will be in in Couple week —

187 lbs Resin for each 1200 blanks —

330 lbs resin in 350 Transfers (700 plates)

Edison X01 — with Steam Dried Powder using Reg Varnish without Paria + gave on 42 OK out of 47 transferred

This Varnish Keeps Constant Viscosity & does not change in 15 hours in the room —

The Viscosity in above Expt was too Low only 2 min 47 sec thru, a mistake of Hoffman mean, it flowed like Water & Moore thought from looking at plates that they would be poor, Centers strong thin

another test of E X01 with Varnish Reg ~~without~~ Paria but 2 ~~[illegible]~~ Penta gives 91% OK transfers + 100 printed —

2 Cooked Centers
6 Lifts
1 Crushed Var

This shows, as far as transfers Paria not necessary

4	Loaders	8 00
2	presses	4 00
4	Carriers from presses	8 00
4	Magnet	8 00
2	Extractors	4 00
2	Truck	4 00
2	Extra	4 00
1/2	foreman	2 00
1/2	Inspect	2 00
		44.00

8

2400 | 44 00 (1.8352

24 00

20 00

19 20

8 0.0

2400 | 52 00 (21.65

48 00

4 00

2 4 00

1 6 00

.66

24-

2.165

3 800

59.65

6.C

200 | 300 (2000

1800

200

3.6
2.2
5.80

100 — 5.80

T— 86 ok — 6.74 per 100

Print 92 ~~40~~ — 853 " 100

79 left —

Test 80% — 63 left. 13.4 100

86) 5.80 (6.74 37 Returns 3.8 12.
516
642
860
36

79
80
632

86
86
516
688

79) 674 (8.53
632
420
395
25

86
92
172
774
792

37
38
296
111
140.6

63) 853 (13.5
63
223
189
34

13.40
140
120

12 Cents — Element
20 Labor
32

34.5
34.5
40
138

34.5
13.8
48.3

8000) 160000 (

62.5
48.3
14.2

140
8
120

225000
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2

347
315
6.62

7-

3.47
900
6.47

7.74
75
387
5418
58050

13.4
30
16.4

360
226
586

580
754
226

6.75
45
5

580 | 7.74 (133
580
1940
1740
200

16.4
200
364

36.4
40
1456
3640
50.9

8050 | 160000 (20
16000

50.96

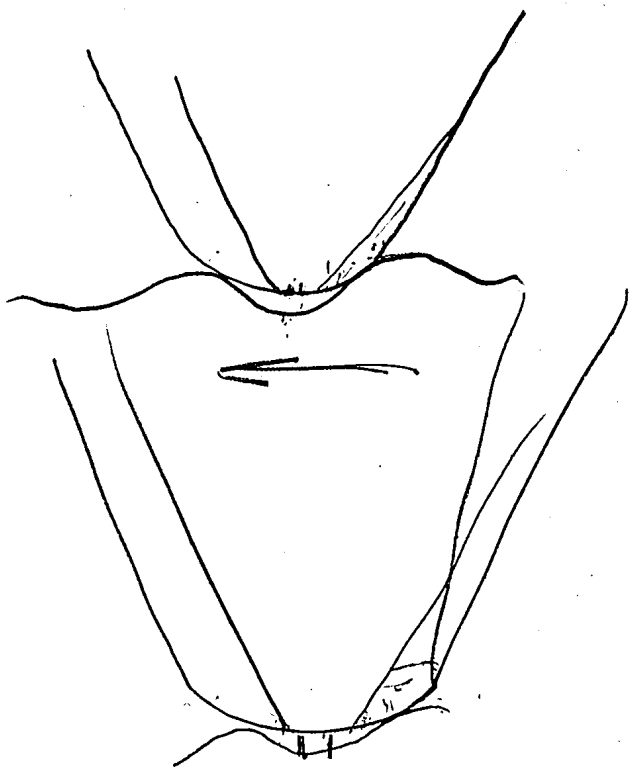
36.4
3
43.7

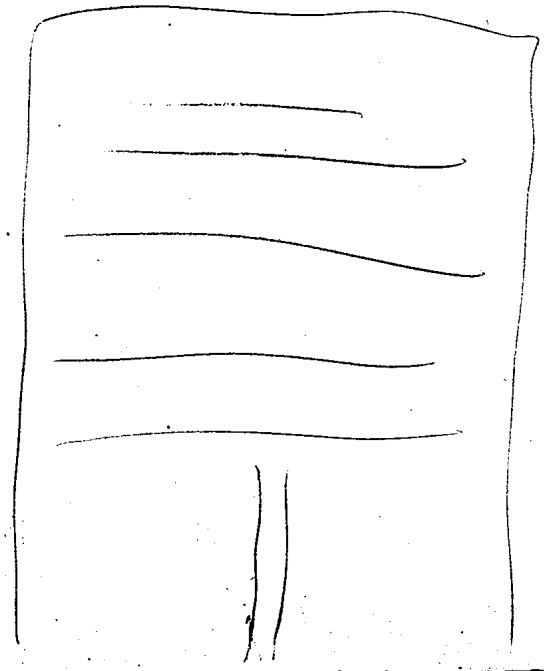
364
145
509

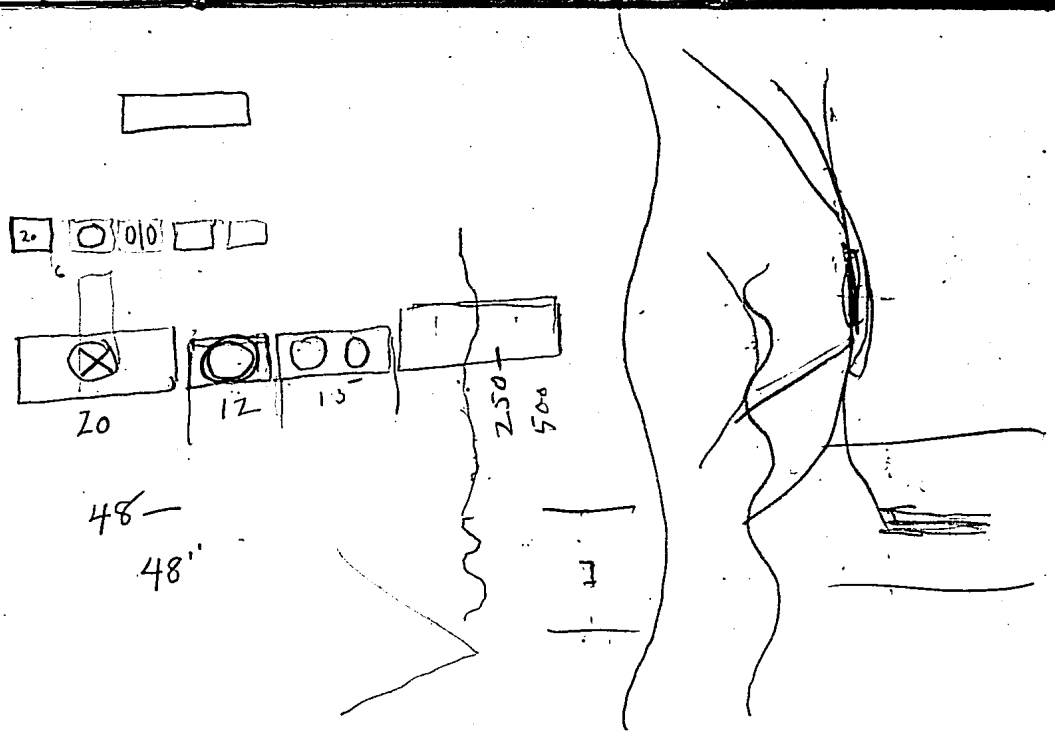
86
86
516
6886
139

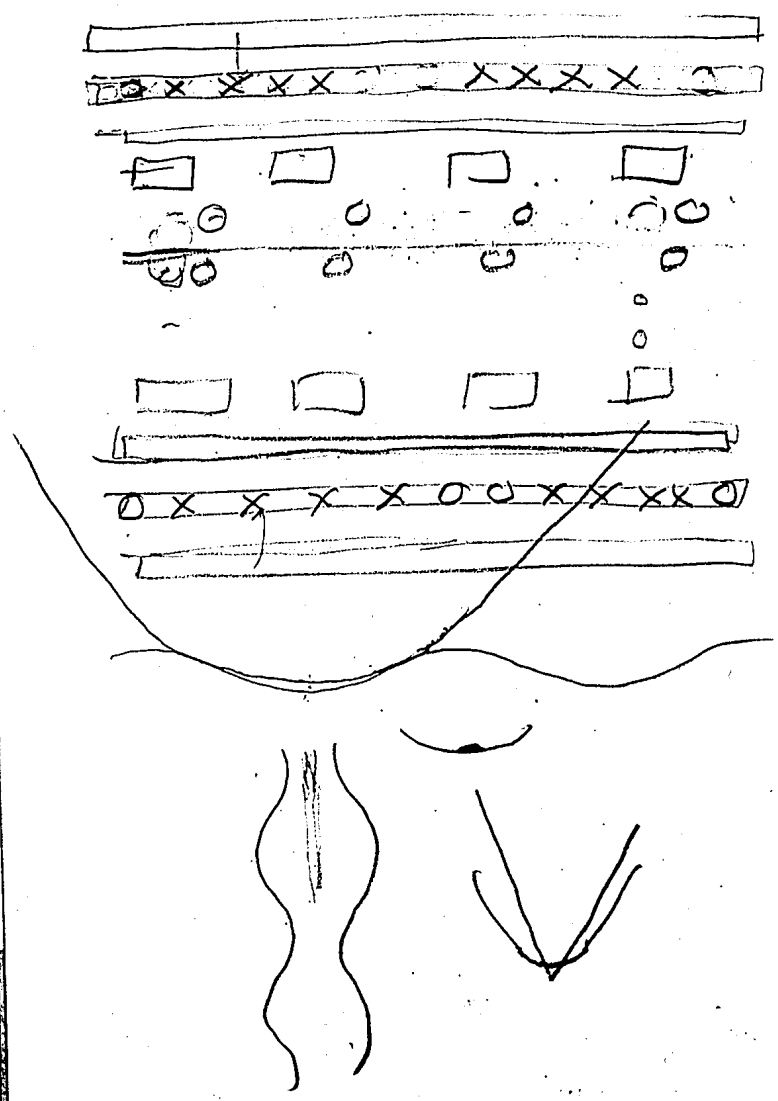
74
25
370
5180
5550

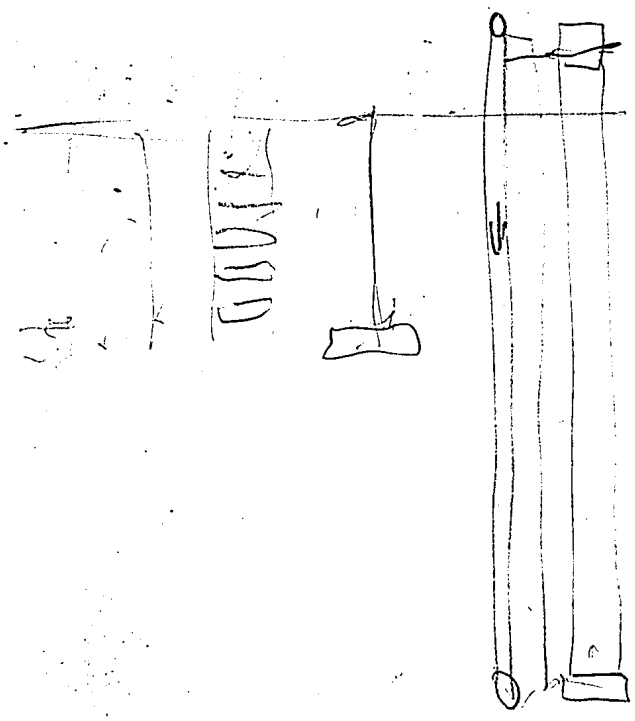
364
20
7280
7

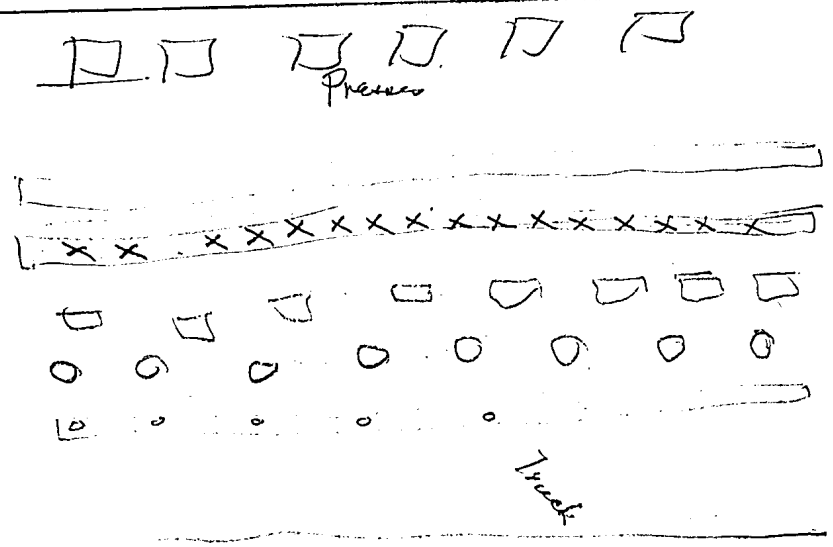


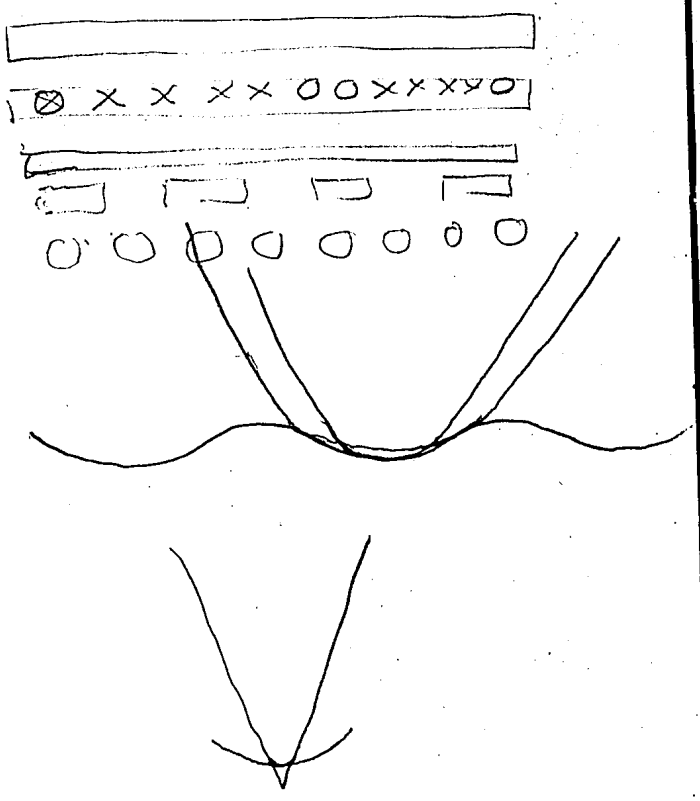


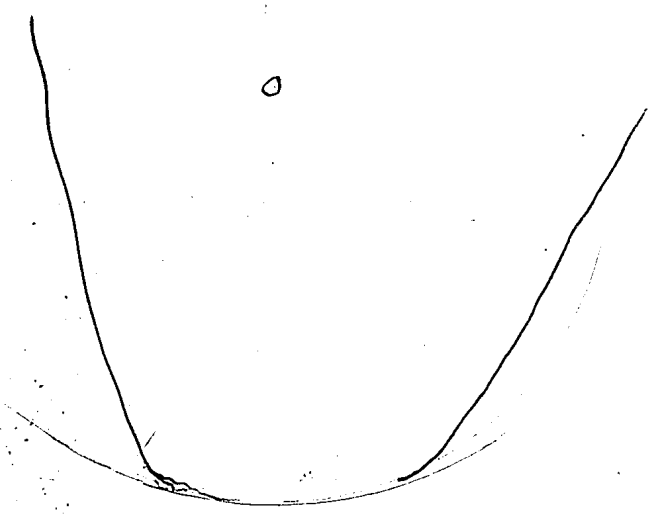

20
20
12
15
250
500
48
48"

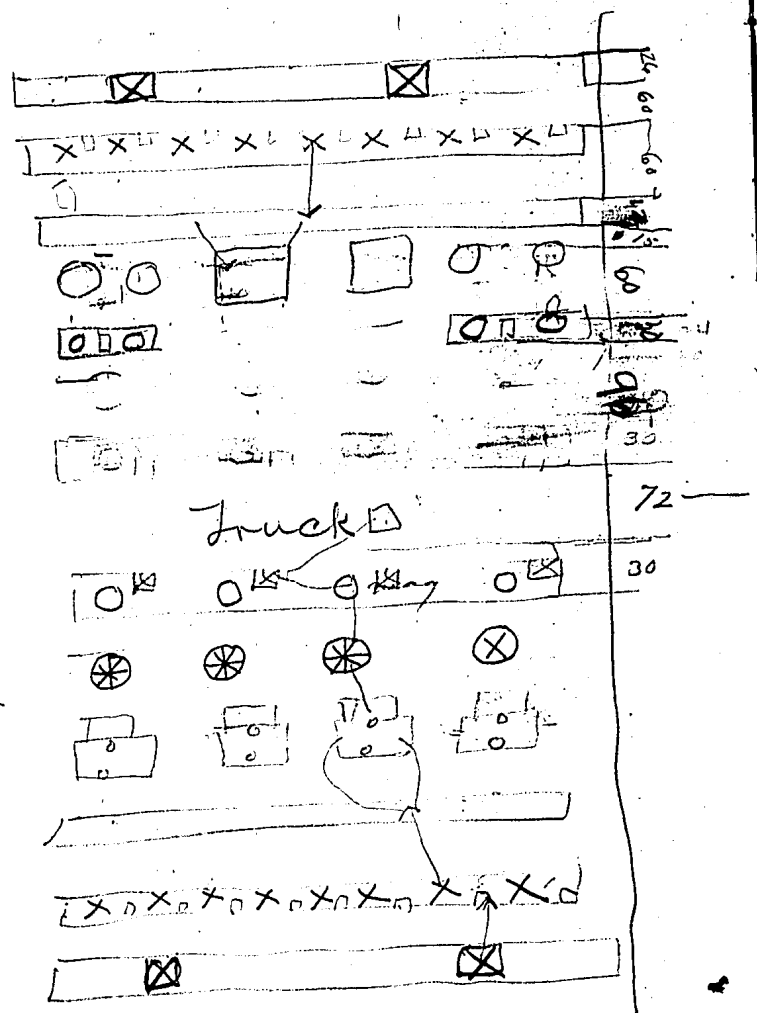




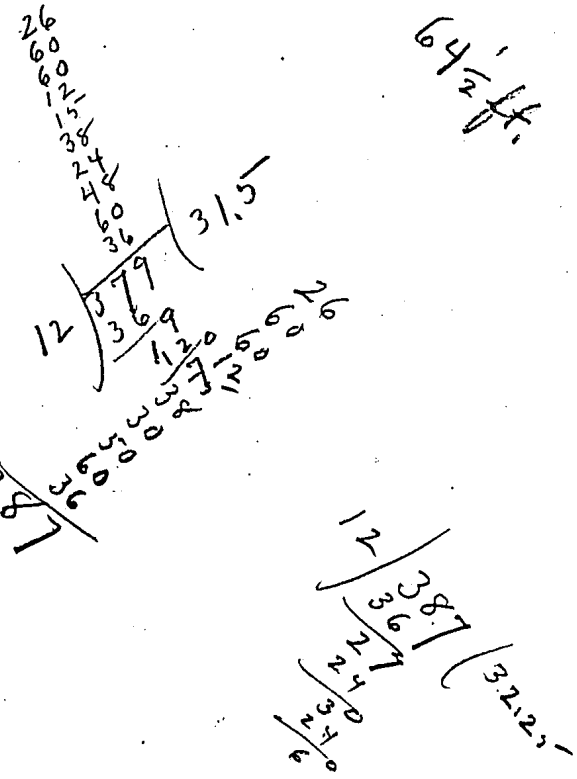

Pneumo
Truck







from press platform to partition of Dye room 36 ft



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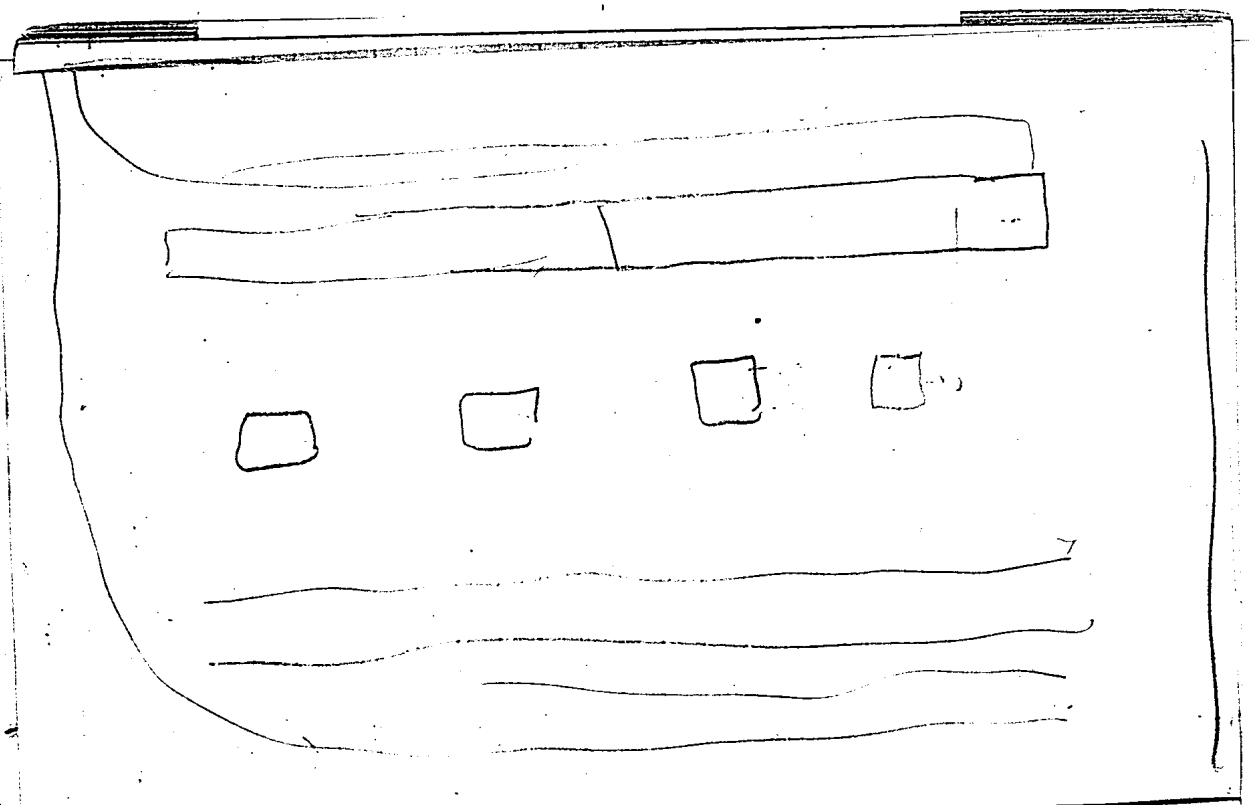

55 | 27600 (5018
100
155
450

9000
5018
3982

12500
91
11250
112500
1137500

4600
6
27600
27600
100

3910

11375 — 55
91

11375
10237
10351
10351
8524
8500
5980
2520

625

5200
110

130
46
780
520
5980

9523

8500
20
51000
17000
21000

400 | 7000 (17
40000
3

19 Days

187 | 5400 (28,2
374
1660
1496
1640

12 | 70 (5
60
100
96

500
270
4 | 270000
67500

12 | 100 (8
96
0

8390
8
6712

83900
6712
7716 3

12 | 110 (91.6
108
20
12
8

5 77

91.6
91.6
5496
916
9164
8244
83905.6

100 10
8